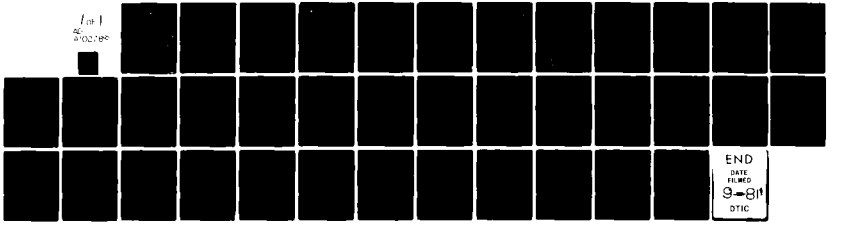
AD-A102 788 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
193040 MLRS. MISSILE NUMBER V02-004, V02-005. ROUND NUMBER V-15--ETC(U)
JUN 81 D C KELLER
UNCLASSIFIED ERADCOM/ASL-DR-1190 NL



DR 1190
June 1981

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AD

LEVEL II

12

METEOROLOGICAL DATA REPORT

19304D MLRS

Missile Number V02-004, V02-005

Round Number V-158/MD-25, V-159/MD-26

by

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Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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CONTENTS

(9) Meteorological data rept.,

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REPORT DOCUMENTATION PAGE

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1. REPORT NUMBER: DR 1190	2. GOVT ACCESSION NO.: AD-A102 788
3. RECIPIENT'S CATALOG NUMBER:	
4. TITLE (and Subtitle): (6) 19304D [redacted] MLRS Missile Number V02-004, V02-005. Round Number V-158/MD-25, V-159/MD-26.	5. TYPE OF REPORT & PERIOD COVERED:
	6. PERFORMING ORG. REPORT NUMBER:
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 19304D, Missile Number V02-004, V02-005, Round Number V-158/MD-25, V-159/MD-26 presented in tabular form.

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UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

INTRODUCTION

19304D MLRS, Missile Number V02-004, V02-005, Round Number V-158/MD-25, V-158/MD-26, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1716 & 1754:06 on 23 June 1981. The scheduled launch time was 1600 and 1730 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature (^{o}C), relative humidity, dew point (^{o}C), density (gm/m^3), Wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

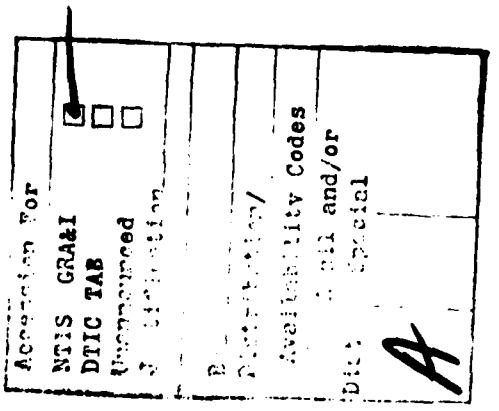
b. Upper Air

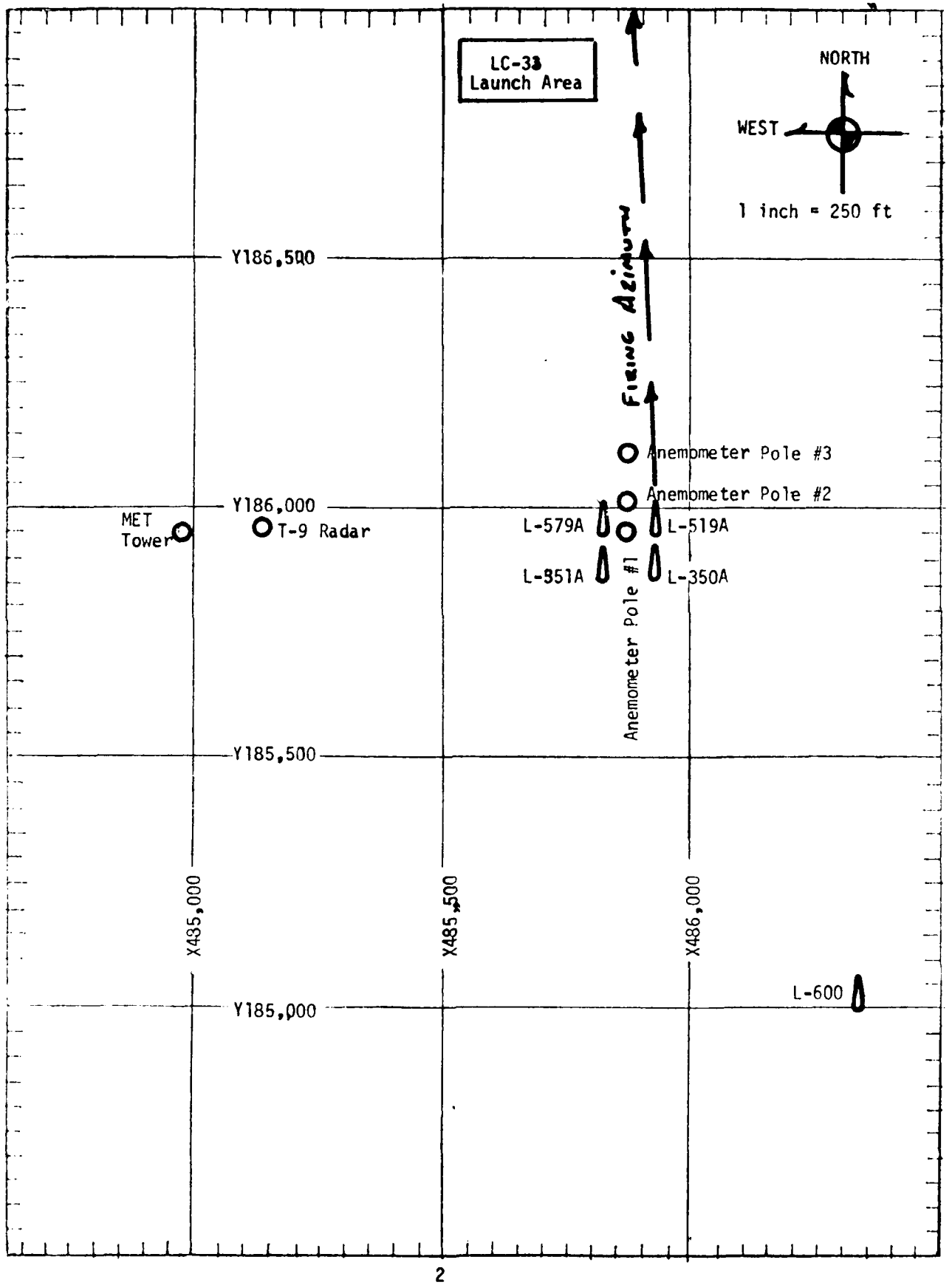
(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

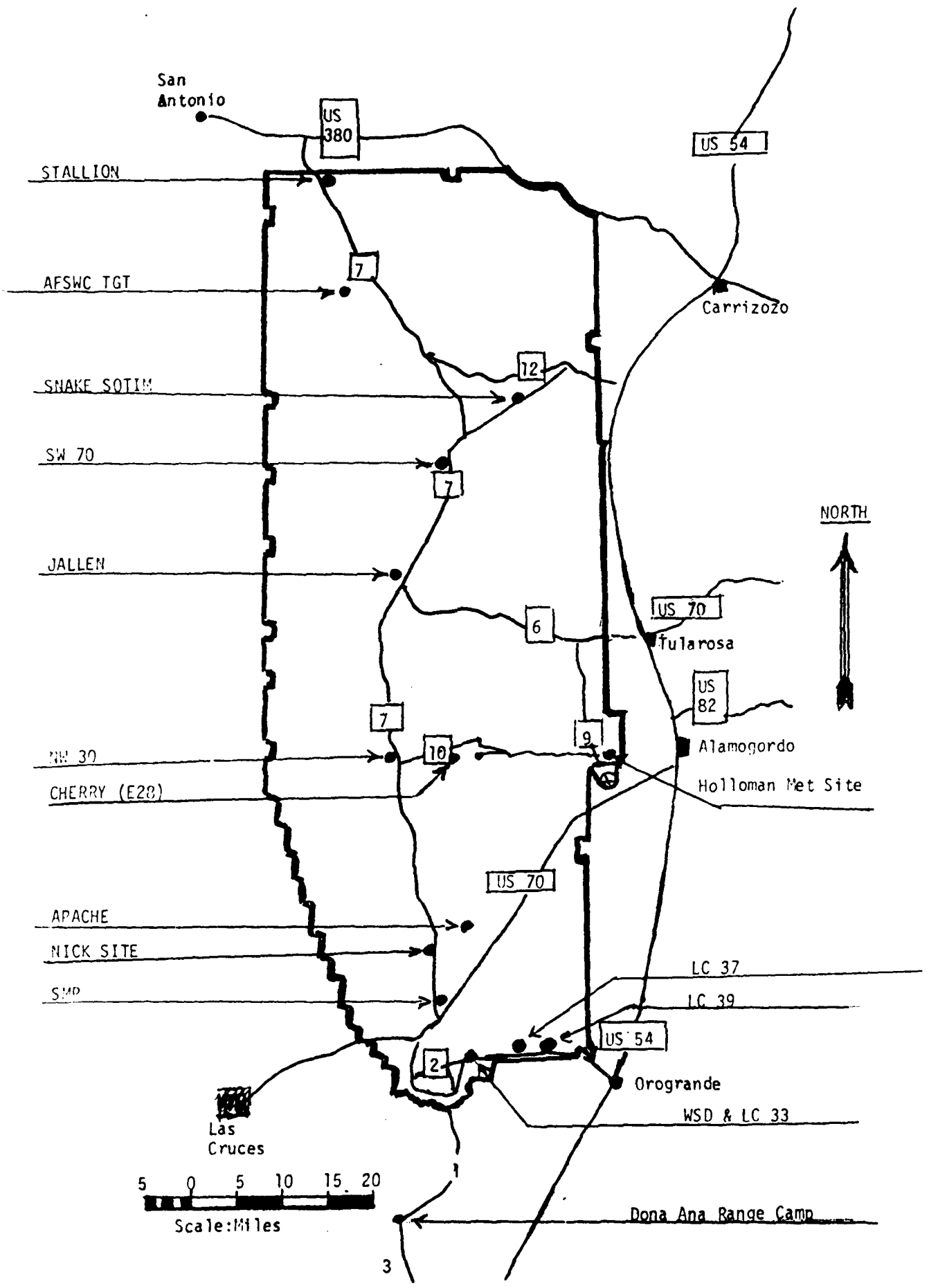
SITE AND ALTITUDE		
NICK	1715 MDT	2 Km
LC-33	1715 MDT	2 Km
NICK	1754 MDT	2 Km

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME	
WSD	1210 MDT
LC-37	1500 MDT
WSD	1600 MDT
LC-37	1715 MDT




LC-38
Launch Area
NORTH
WEST
1 inch = 250 ft
Y186,500
Firing Azimuth
Anemometer Pole #3
Anemometer Pole #2
Y186,000
MET
Tower
T-9 Radar
L-579A
L-519A
L-351A
L-350A
Anemometer Pole #1
Y185,500
X485,000
X485,500
X486,000
L-600
Y185,000


San Antonio
US 380
US 54
STALLION
AFSWC TGT
7
Carrizozo
12
SNAKE SOTIM
SW 70
7
NORTH
JALLEN
US 70
6
Tularosa
US 82
7
9
Alamogordo
NW 30
10
CHERRY (E28)
Holloman Met Site
US 70
APACHE
NICK SITE
LC 37
SMP
LC 39
US 54
2
Orogrande
WSD & LC 33
Las Cruces
1
5 0 5 10 15 20
Scale:Miles
Dona Ana Range Camp
3

PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33

DATE 23 June 1981 (DAY / MONTH / YEAR) X= 484,982.64 Y= 185,957.73 H= 3983.00

TIME M D I	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1717	875.8		37.1		13.7	25	976	150	08		30
1800	876.0		33.8		9.3	22	988	110	25		30

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
	4	CB	8000	6	Cl	23000				CB NE-SE, NW
	5	CB	8000	5	Cl	23000				

PSYCHROMETRIC COMPUTATION

TIME:	1717	1800	
DRY BULB TEMP.	37.1	33.8	
WET BULB TEMP.	21.0	18.0	
WET BULB DEPR.	16.1	15.8	
DEW POINT	13.7	9.3	
RELATIVE HUMID.	25	22	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

1715 MDT 23 Jun 81

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	118	09	-30	146	MISG	-30	135	09
-20	127	09	-20	144	MISG	-20	134	11
-10	129	09	-10	144	MISG	-10	143	09
0.0	147	07	0.0	168	MISG	0.0	139	09
+10	146	06	+10	MISG	MISG	+10	168	06

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484.982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	153	09	-30	178	10
-20	177	09	-20	180	12
-10	160	09	-10	174	10
0.0	156	11	0.0	178	09
+10	167	09	+10	168	09

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	177	12	-30	164	13
-20	174	11	-20	164	12
-10	174	12	-10	162	11
0.0	166	10	0.0	164	10
+10	164	09	+10	162	11

TABLE 4 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

1755 MDT 23 Jun 81

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	077	19	-30	099	MISG	-30	099	22
-20	058	17	-20	090	MISG	-20	097	23
-10	085	19	-10	090	MISG	-10	108	19
0.0	075	15	0.0	093	MISG	0.0	096	18
+10	072	15	+10	091	MISG	+10	089	21

TABLE 5 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (250 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484.982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	105	28	-30	108	28
-20	109	23	-20	107	19
-10	117	22	-10	113	22
0.0	129	15	0.0	104	21
+10	120	15	+10	105	20

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	102	28	-30	102	28
-20	094	22	-20	099	28
-10	106	23	-10	094	22
0.0	093	19	0.0	096	19
+10	093	20	+10	096	21

TABLE 6

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 23 June 1981

SITE: LC-33
TIME: 1715 MDT
WSTM COORDINATES:
X= 485,135.76
Y= 185,919.24
H= 3,988.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	150	08
150	179	07
210	176	06
270	155	07
330	151	09
390	156	12
500	154	12
650	178	10
800	178	08
950	176	07
1150	161	07
1350	161	09
1550	152	08
1750	170	06
2000	163	06

Data obtained from T-9 Radar Tracked Pilot-Balloon Observation

SITE: NICK
TIME: 1715 MDT
WSTM COORDINATES:
X= 470,734.56
Y= 255,775.64
H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	175	08
150	154	11
210	148	12
270	142	13
330	137	14
390	135	13
500	131	12
650	137	09
800	146	11
950	148	12
1150	139	09
1350	183	02
1550	278	05
1750	241	08
2000	244	10

Data obtained from Single Theodolite Tracked Pilot-Balloon Observation

TABLE 7

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 23 June 1981

SITE: NICK

TIME: 1754 MDT

WSTM COORDINATES:

X= 470,734.56

Y= 255,775.64

H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	110	12
150	111	18
210	112	20
270	115	19
330	118	19
390	120	19
500	123	21
650	127	20
800	128	20
950	137	16
1150	172	06
1350	144	06
1550	202	04
1750	243	09
2000	209	09

AIMING AND T-TIME COMPUTER MESSAGES

23 JUNE 1981

LC 37 1500 MDT
METCM1324063
232100124874
00373007 30920874
01376010 30790865
02344014 30520841
03318010 30170804
04291009 29680759
05312011 29200717
06283006 28760676
07218002 28360637
08130009 27970599

WSD 1600 MDT
METCM1324064
232200122877
00373012 31120877
01311019 30990867
02242016 30690843
03287014 30250806
04306009 29710762
05338009 29240719
06369007 28760678
07199004 28360639
08195008 27940601

LC 37 1715 MDT
METCM1324063
232330124873
00444005 30990873
01392013 30960863
02263006 30660839
03265088 30290803
04267006 29840758
05357004 29390716
06369007 28830675
07376006 28280636
08379009 27810599

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1210 HRS MDT
ASCENSION NO. 410

SIGNIFICANT LEVEL DATA
1740020410
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
878.0	3989.0	32.3	15.3	36.0
850.0	4943.7	29.2	15.3	43.0
804.2	6550.9	23.5	11.5	47.0
776.6	7552.1	22.6	8.7	41.0
700.0	10488.8	16.1	2.2	39.0
593.2	15030.0	5.7	-5.9	43.0
500.0	19528.1	-6.6	-13.9	56.0
400.0	25125.2	-19.7	-23.4	72.0
358.2	27788.9	-26.2	-29.9	71.0
300.0	31942.3	-34.4	-42.1	45.0
258.0	35363.7	-41.6	-50.5	37.0
250.0	36066.3	-42.3		
200.0	40901.7	-54.9		
190.4	41932.6	-57.2		
163.8	45041.7	-61.1		
150.0	46824.5	-65.7		
135.4	48859.5	-69.1		
115.6	51961.7	-71.0		
100.0	54807.8	-69.0		
89.8	56923.0	-70.5		
70.0	61907.6	-61.9		
50.0	68874.2	-56.4		
47.4	69999.7	-54.4		
32.6	78011.6	-49.8		
30.0	79825.3	-46.0		
20.0	88836.9	-41.7		
18.2	90949.6	-42.6		

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1210 HRS MDT
ASCENSION NO. 410

UPPER AIR DATA
1740020410
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	878.0	32.3	15.3	36.0	993.8	683.4	180.0	9.9	1.000292
4000.0	877.7	32.3	15.3	36.1	993.6	683.4	180.1	9.9	1.000292
4500.0	862.9	30.6	15.4	39.7	981.9	681.6	186.1	10.1	1.000291
5000.0	848.4	29.0	15.2	43.1	970.6	679.8	191.8	10.4	1.000288
5500.0	833.9	27.2	14.0	44.4	960.0	677.7	197.2	10.8	1.000281
6000.0	819.6	25.5	12.9	45.6	949.6	675.5	202.1	11.3	1.000275
6500.0	805.6	23.7	11.7	46.9	939.4	673.4	214.2	9.7	1.000268
7000.0	791.7	23.1	10.3	44.3	925.4	672.6	226.9	8.6	1.000260
7500.0	778.0	22.6	8.8	41.3	911.2	671.9	231.6	8.1	1.000252
8000.0	764.4	21.6	7.7	40.7	898.7	670.6	228.5	7.2	1.000246
8500.0	751.0	20.5	6.6	40.4	886.6	669.2	214.3	6.4	1.000240
9000.0	737.8	19.4	5.5	40.0	874.6	667.9	194.6	5.3	1.000235
9500.0	724.9	18.3	4.4	39.7	862.7	666.5	167.6	5.0	1.000229
10000.0	712.2	17.2	3.2	39.3	851.1	665.2	159.5	5.5	1.000224
10500.0	699.7	16.1	2.1	39.0	839.5	663.8	153.3	5.9	1.000219
11000.0	687.1	14.9	1.3	39.5	827.8	662.4	147.0	5.3	1.000215
11500.0	674.7	13.8	.4	39.9	816.2	661.1	132.6	4.7	1.000211
12000.0	662.5	12.6	-.5	40.3	804.8	659.7	102.9	4.9	1.000207
12500.0	650.5	11.5	-1.4	40.8	793.6	658.3	81.9	6.5	1.000203
13000.0	638.8	10.3	-2.2	41.2	782.5	657.0	72.6	9.2	1.000199
13500.0	627.2	9.2	-3.1	41.7	771.6	655.6	68.0	11.3	1.000195
14000.0	615.9	8.1	-4.0	42.1	760.9	654.2	65.4	12.4	1.000191
14500.0	604.8	6.9	-4.9	42.5	750.3	652.8	64.5	12.7	1.000188
15000.0	593.8	5.8	-5.8	43.0	739.8	651.4	65.3	12.2	1.000184
15500.0	582.7	4.4	-6.6	44.4	729.6	649.8	67.1	11.5	1.000181
16000.0	571.7	3.0	-7.5	45.8	719.5	648.2	70.0	10.6	1.000178
16500.0	561.0	1.7	-8.3	47.2	709.5	646.6	65.4	9.6	1.000174
17000.0	550.4	.3	-9.2	48.7	699.7	644.9	56.1	8.6	1.000171
17500.0	540.1	-1.1	-10.1	50.1	690.1	643.3	46.2	8.3	1.000168
18000.0	529.9	-2.4	-11.0	51.6	680.6	641.6	36.2	8.3	1.000165
18500.0	519.9	-3.8	-11.9	53.0	671.2	640.0	30.8	8.3	1.000162
19000.0	510.1	-5.2	-12.9	54.5	662.0	638.3	24.8	8.7	1.000159
19500.0	500.5	-6.5	-13.8	55.9	652.9	636.6	15.8	12.1	1.000157
20000.0	490.7	-7.7	-14.6	57.3	643.0	635.2	11.1	15.1	1.000154
20500.0	481.0	-8.9	-15.4	58.8	633.1	633.8	8.7	16.2	1.000151
21000.0	471.5	-10.0	-16.3	60.2	623.4	632.4	6.5	16.3	1.000148
21500.0	462.2	-11.2	-17.1	61.6	613.9	630.9	3.8	14.4	1.000146
22000.0	453.1	-12.4	-17.9	63.1	604.5	629.5	.7	13.7	1.000143
22500.0	444.1	-13.6	-18.8	64.5	595.3	628.1	358.2	14.5	1.000140
23000.0	435.4	-14.7	-19.7	65.9	586.2	626.6	358.6	14.5	1.000138

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1210 HRS MDT
ASCENSION NO. 410

UPPER AIR DATA
1740020410
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10 (con't)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	426.8	-15.9	-20.5	67.4	577.3	625.2	.8	14.1	1.000135
24000.0	418.4	-17.1	-21.4	68.8	568.5	623.7	3.3	12.6	1.000133
24500.0	410.1	-18.2	-22.3	70.2	559.9	622.3	6.6	10.9	1.000131
25000.0	402.0	-19.4	-23.2	71.6	551.4	620.8	2.4	10.6	1.000128
25500.0	393.8	-20.6	-24.3	71.9	542.8	619.3	358.4	10.6	1.000126
26000.0	385.8	-21.8	-25.5	71.7	534.3	617.8	355.9	10.9	1.000124
26500.0	377.8	-23.1	-26.8	71.5	526.0	616.3	358.3	10.3	1.000121
27000.0	370.1	-24.3	-28.0	71.3	517.7	614.8	4.8	9.4	1.000119
27500.0	362.5	-25.5	-29.2	71.1	509.6	613.3	19.0	9.8	1.000117
28000.0	355.0	-26.6	-30.5	69.7	501.4	611.8	32.7	11.5	1.000115
28500.0	347.5	-27.6	-31.9	66.5	492.8	610.6	39.1	10.4	1.000112
29000.0	340.2	-28.6	-33.3	63.4	484.3	609.4	45.8	8.1	1.000110
29500.0	333.0	-29.6	-34.8	60.3	476.1	608.1	55.1	5.1	1.000108
30000.0	325.9	-30.6	-36.2	57.2	467.9	606.9	88.9	2.2	1.000106
30500.0	319.1	-31.6	-37.7	54.0	459.9	605.6	105.3	2.8	1.000104
31000.0	312.3	-32.5	-39.2	50.9	452.1	604.4	97.6	4.3	1.000102
31500.0	305.7	-33.5	-40.7	47.8	444.4	603.1	102.7	4.2	1.000100
32000.0	299.2	-34.5	-42.3	44.9	436.8	601.9	116.4	3.4	1.000098
32500.0	292.7	-35.6	-43.5	43.7	429.1	600.5	117.7	1.5	1.000096
33000.0	286.3	-36.6	-44.7	42.5	421.7	599.2	310.4	.8	1.000095
33500.0	280.1	-37.7	-45.9	41.4	414.3	597.9	342.9	3.1	1.000093
34000.0	274.0	-38.7	-47.1	40.2	407.1	596.5	348.4	5.4	1.000091
34500.0	268.0	-39.8	-48.4	39.0	400.0	595.2	349.4	6.1	1.000090
35000.0	262.2	-40.8	-49.6	37.9	393.1	593.8	349.8	6.7	1.000088
35500.0	256.4	-41.7	-52.4	29.8**	386.0	592.7	344.0	6.6	1.000086
36000.0	250.7	-42.2	-69.1	3.5**	378.3	592.0	336.7	6.2	1.000084
36500.0	245.0	-43.4			371.6	590.5	307.1	4.0	1.000083
37000.0	239.5	-44.7			365.2	588.8	258.4	4.0	1.000081
37500.0	234.0	-46.0			358.9	587.1	221.0	4.9	1.000080
38000.0	228.7	-47.3			352.8	585.4	201.1	7.1	1.000079
38500.0	223.4	-48.6			346.7	583.7	206.9	8.6	1.000077
39000.0	218.3	-49.9			340.8	582.0	211.0	10.3	1.000076
39500.0	213.4	-51.2			335.0	580.3	218.4	10.4	1.000075
40000.0	208.5	-52.6			329.3	578.6	225.8	10.7	1.000073
40500.0	203.7	-53.9			323.7	576.9	235.0	8.6	1.000072
41000.0	199.1	-55.1			318.1	575.2	250.6	6.5	1.000071
41500.0	194.4	-56.2			312.2	573.8	252.0	6.5	1.000070
42000.0	189.8	-57.3			306.3	572.4	250.5	6.8	1.000068
42500.0	185.2	-57.9			299.8	571.6	259.9	4.9	1.000067
43000.0	180.8	-58.5			293.5	570.7	290.2	3.0	1.000065

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1210 HRS MDT
ASCENSION NO. 410

UPPER AIR DATA
1740020410
WHITE SANDS
TABLE 10 (Con't)

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	176.5	-59.2			287.3	569.9	12.6	5.7	1.000064
44000.0	172.3	-59.8			281.3	569.0	28.7	12.9	1.000063
44500.0	168.2	-60.4			275.4	568.2	37.9	16.9	1.000061
45000.0	164.1	-61.0			269.6	567.4	46.9	19.3	1.000060
45500.0	160.1	-62.3			264.6	565.7	57.5	20.6	1.000059
46000.0	156.2	-63.6			259.7	564.0	69.7	21.6	1.000058
46500.0	152.4	-64.9			254.9	562.2	79.4	23.6	1.000057
47000.0	148.7	-66.0			250.0	560.7	86.7	26.2	1.000056
47500.0	145.0	-66.8			244.8	559.6	92.2	28.2	1.000055
48000.0	141.4	-67.7			239.7	558.5	96.6	28.7	1.000053
48500.0	137.9	-68.5			234.7	557.3	99.9	28.7	1.000052
49000.0	134.4	-69.2			229.6	556.4	98.2	25.4	1.000051
49500.0	131.1	-69.5			224.2	556.0	95.9	22.1	1.000050
50000.0	127.8	-69.8			218.9	555.5	88.1	19.3	1.000049
50500.0	124.5	-70.1			213.7	555.1	76.2	17.4	1.000048
51000.0	121.4	-70.4			208.6	554.7	63.0	16.8	1.000046
51500.0	118.4	-70.7			203.7	554.3	55.3	19.0	1.000045
52000.0	115.4	-71.0			198.8	553.9	49.4	21.5	1.000044
52500.0	112.5	-70.6			193.5	554.4	50.4	21.0	1.000043
53000.0	109.6	-70.3			188.3	554.9	56.6	18.5	1.000042
53500.0	106.9	-69.9			183.2	555.4	66.4	15.8	1.000041
54000.0	104.2	-69.6			178.3	555.9	91.4	12.3	1.000040
54500.0	101.6	-69.2			173.5	556.3	124.3	12.3	1.000039
55000.0	99.0	-69.1			169.1	556.4	137.9	13.1	1.000038
55500.0	96.5	-69.5			165.1	556.0	146.5	13.8	1.000037
56000.0	94.1	-69.8			161.3	555.5	149.5	13.8	1.000036
56500.0	91.8	-70.2			157.5	555.0	140.2	12.0	1.000035
57000.0	89.5	-70.4			153.7	554.8	128.1	10.7	1.000034
57500.0	87.2	-69.5			149.2	555.9	122.7	10.5	1.000033
58000.0	85.1	-68.6			145.0	557.1	119.5	10.5	1.000032
58500.0	83.0	-67.8			140.8	558.3	116.1	10.5	1.000031
59000.0	80.9	-66.9			136.7	559.5	111.5	10.2	1.000030
59500.0	78.9	-66.1			132.8	560.6	106.7	9.9	1.000030
60000.0	77.0	-65.2			129.0	561.8	96.4	9.8	1.000029
60500.0	75.1	-64.3			125.3	563.0	84.8	10.2	1.000028
61000.0	73.2	-63.5			121.7	564.1	78.4	10.9	1.000027
61500.0	71.4	-62.6			118.2	565.3	82.5	11.9	1.000026
62000.0	69.7	-61.8			114.9	566.3	85.9	13.0	1.000026
62500.0	68.0	-61.4			111.9	566.9	85.9	14.7	1.000025
63000.0	66.4	-61.0			109.1	567.4	85.0	16.7	1.000024

STATION ALTITUDE 3989.00 FEET MSL
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UPPER AIR DATA
1740020410
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10 (Cont'T)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
63500.0	64.8	-60.6			106.3	567.9	84.3	18.7	1.000024
64000.0	63.3	-60.2			103.5	568.4	86.0	19.5	1.000023
64500.0	61.8	-59.9			100.9	569.0	87.8	20.2	1.000022
65000.0	60.3	-59.5			98.3	569.5	89.9	21.0	1.000022
65500.0	58.8	-59.1			95.8	570.0	95.6	23.0	1.000021
66000.0	57.4	-58.7			93.3	570.5	100.4	25.3	1.000021
66500.0	56.1	-58.3			90.9	571.1	103.5	27.2	1.000020
67000.0	54.7	-57.9			88.6	571.6	104.3	28.1	1.000020
67500.0	53.4	-57.5			86.3	572.1	105.0	28.9	1.000019
68000.0	52.2	-57.1			84.1	572.6	104.4	27.7	1.000019
68500.0	50.9	-56.7			81.9	573.2	103.2	25.8	1.000018
69000.0	49.7	-56.2			79.8	573.9	101.6	24.2	1.000018
69500.0	48.5	-55.3			77.6	575.0	99.1	23.9	1.000017
70000.0	47.4	-54.4			75.5	576.2	96.6	23.6	1.000017
70500.0	46.3	-54.1			73.6	576.6	96.1	23.9	1.000016
71000.0	45.2	-53.8			71.9	577.0	96.7	24.6	1.000016
71500.0	44.2	-53.5			70.1	577.3	97.3	25.2	1.000016
72000.0	43.2	-53.3			68.4	577.7	97.9	25.4	1.000015
72500.0	42.2	-53.0			66.7	578.1	98.5	25.5	1.000015
73000.0	41.2	-52.7			65.1	578.5	99.1	25.6	1.000014
73500.0	40.2	-52.4			63.5	578.8	98.4	25.7	1.000014
74000.0	39.3	-52.1			62.0	579.2	97.4	25.9	1.000014
74500.0	38.4	-51.8			60.5	579.6	96.4	26.1	1.000013
75000.0	37.5	-51.5			59.0	580.0	99.1	26.4	1.000013
75500.0	36.7	-51.2			57.5	580.3	103.1	27.0	1.000013
76000.0	35.8	-51.0			56.1	580.7	106.9	27.6	1.000013
76500.0	35.0	-50.7			54.8	581.1	107.5	28.0	1.000012
77000.0	34.2	-50.4			53.4	581.5	106.3	28.1	1.000012
77500.0	33.4	-50.1			52.1	581.8	105.2	28.2	1.000012
78000.0	32.6	-49.8			50.9	582.2	102.5	28.8	1.000011
78500.0	31.9	-48.8			49.5	583.6	99.1	29.9	1.000011
79000.0	31.2	-47.7			48.1	584.9	95.9	31.1	1.000011
79500.0	30.5	-46.7			46.8	586.3	94.5	31.7	1.000010
80000.0	29.8	-45.9			45.6	587.3	94.9	31.5	1.000010
80500.0	29.1	-45.7			44.6	587.6	95.3	31.4	1.000010
81000.0	28.5	-45.4			43.5	587.9	95.7	30.9	1.000010
81500.0	27.8	-45.2			42.5	588.2	96.4	29.6	1.000009
82000.0	27.2	-45.0			41.5	588.5	97.1	28.3	1.000009
82500.0	26.6	-44.7			40.6	588.8	98.0	27.2	1.000009
83000.0	26.0	-44.5			39.6	589.1	99.8	27.4	1.000009

STATION ALTITUDE 3989.00 FEET MSL
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UPPER AIR DATA
1740020410
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
83500.0	25.4	-44.2			38.7	589.4	101.6	27.5	1.000009
84000.0	24.9	-44.0			37.8	589.7	103.3	27.8	1.000008
84500.0	24.3	-43.8			36.9	590.0	106.0	25.0	1.000008
85000.0	23.8	-43.5			36.1	590.3	109.4	22.2	1.000008
85500.0	23.2	-43.3			35.2	590.6	113.8	19.4	1.000008
86000.0	22.7	-43.1			34.4	590.9	110.5	21.3	1.000008
86500.0	22.2	-42.8			33.6	591.3	105.8	25.1	1.000007
87000.0	21.7	-42.6			32.8	591.6	102.3	28.9	1.000007
87500.0	21.2	-42.3			32.1	591.9	99.3	32.7	1.000007
88000.0	20.8	-42.1			31.3	592.2	96.6	36.3	1.000007
88500.0	20.3	-41.9			30.6	592.5	94.3	40.1	1.000007
89000.0	19.9	-41.8			29.9	592.6			1.000007
89500.0	19.4	-42.0			29.3	592.3			1.000007
90000.0	19.0	-42.2			28.6	592.0			1.000006
90500.0	18.6	-42.4			28.0	591.8			1.000006

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1210 HRS MDT
ASCENSION NO. 410

MANDATORY LEVELS
1740020410
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 11

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4940.	29.2	15.3	43.	191.2	10.4
800.0	6696.	23.4	11.1	46.	220.1	9.2
750.0	8538.	20.4	6.5	40.	212.9	6.3
700.0	10478.	16.1	2.2	39.	153.5	5.9
650.0	12529.	11.4	-1.4	41.	80.9	6.7
600.0	14705.	6.4	-5.3	43.	64.8	12.5
550.0	17023.	.3	-9.2	49.	55.3	8.6
500.0	19500.	-6.6	-13.9	56.	15.6	12.2
450.0	22171.	-12.8	-18.2	64.	359.7	14.0
400.0	25082.	-19.7	-23.4	72.	1.4	10.6
350.0	28287.	-27.3	-31.4	68.	37.4	11.2
300.0	31878.	-34.4	-42.1	45.	114.1	3.5
250.0	35986.	-42.3			334.9	5.9
200.0	40801.	-54.9			246.1	7.0
175.0	43569.	-59.4			20.9	7.9
150.0	46696.	-65.7			83.9	25.1
125.0	50285.	-70.1			78.6	17.7
100.0	54637.	-69.0			133.9	12.9
80.0	59012.	-66.5			109.8	10.1
70.0	61694.	-61.9			85.1	12.7
60.0	64842.	-59.4			90.4	21.1
50.0	68613.	-56.4			102.3	24.5
40.0	73316.	-52.3			98.3	25.7
30.0	79481.	-46.0			94.7	31.6
25.0	83478.	-44.1			102.7	27.7
20.0	88416.	-41.7				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL
23 JUNE 81 1500 HRS MDT
ASCENSION NO. 133

SIGNIFICANT LEVEL DATA
1740180133
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
874.3	4051.4	37.5	9.2	18.0
850.0	4889.3	31.4	7.1	22.0
787.8	7104.6	25.5	7.1	31.0
750.0	8513.0	20.6	7.2	42.0
700.0	10456.4	15.8	3.3	43.0
683.4	11124.5	13.9	2.8	47.0
647.0	12633.2	10.5	-2.5	40.0
551.6	16924.2	.6	-10.8	42.0
535.0	17727.6	-1.9	-11.4	48.0
500.0	19483.6	-6.4	-13.1	59.0
486.8	20170.3	-7.9	-14.9	57.0
422.7	23717.7	-17.5	-21.5	71.0
400.0	25074.4	-19.2	-23.9	66.0
393.0	25505.9	-20.3	-27.6	52.0
359.8	27640.2	-24.5	-32.7	46.0
320.0	30415.8	-30.8	-39.7	41.0
300.0	31913.6	-34.3	-43.1	40.0
282.6	33281.0	-37.5	-46.7	37.0
265.0	34739.1	-38.7	-49.4	31.0
250.0	36048.1	-41.9		
231.4	37756.3	-46.4		
226.2	38253.0	-47.0		
210.6	39798.1	-51.2		

STATION ALTITUDE 4051.37 FEET MSL
23 JUNE 81 1500 HRS MDT
ASCENSION NO. 133

UPPER AIR DATA
1740180133
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	874.3	37.5	9.2	18.0	975.5	688.4	210.0	7.0	1.000263
4500.0	861.2	34.2	8.2	20.1	971.4	684.7	200.5	8.2	1.000260
5000.0	846.8	31.1	7.2	22.4	965.1	681.1	192.8	9.7	1.000257
5500.0	832.4	29.8	7.3	24.5	952.8	679.6	187.2	11.3	1.000255
6000.0	818.2	28.4	7.4	26.5	940.0	678.2	182.0	10.0	1.000253
6500.0	804.3	27.1	7.3	28.5	928.7	676.7	176.2	8.8	1.000250
7000.0	790.6	25.8	7.2	30.6	916.9	675.2	173.6	9.0	1.000247
7500.0	777.0	24.1	7.3	34.1	906.0	673.4	170.6	9.2	1.000246
8000.0	763.6	22.4	7.4	38.0	895.5	671.4	167.8	9.5	1.000244
8500.0	750.3	20.6	7.3	41.9	885.1	669.5	168.7	9.8	1.000242
9000.0	737.1	19.4	6.3	42.3	873.5	668.0	169.2	9.8	1.000237
9500.0	724.2	18.2	5.2	42.5	862.0	666.5	169.5	9.5	1.000232
10000.0	711.4	16.9	4.2	42.8	850.6	665.0	165.7	8.1	1.000227
10500.0	698.9	15.7	3.2	43.3	839.5	663.5	159.4	6.6	1.000222
11000.0	686.5	14.3	2.9	46.3	828.6	661.8	164.2	7.0	1.000219
11500.0	674.2	13.1	1.5	45.3	817.4	660.3	168.7	7.3	1.000214
12000.0	662.0	11.9	-.3	42.9	806.2	658.9	174.5	6.6	1.000208
12500.0	650.1	10.8	-2.0	40.6	795.2	657.5	181.6	6.0	1.000202
13000.0	638.2	9.7	-3.2	40.2	784.0	656.1	163.6	2.8	1.000198
13500.0	626.5	8.5	-4.2	40.4	772.8	654.7	67.7	1.9	1.000194
14000.0	614.9	7.3	-5.1	40.6	761.8	653.3	59.1	5.4	1.000190
14500.0	603.6	6.2	-6.1	40.9	750.9	651.9	59.9	9.0	1.000186
15000.0	592.5	5.0	-7.1	41.1	740.3	650.5	80.6	9.0	1.000183
15500.0	581.6	3.9	-8.0	41.3	729.8	649.1	99.4	9.6	1.000179
16000.0	570.9	2.7	-9.0	41.6	719.4	647.7	113.8	9.3	1.000176
16500.0	560.4	1.6	-10.0	41.8	709.2	646.3	126.6	7.9	1.000172
17000.0	550.0	.4	-10.9	42.6	699.2	644.9	125.4	5.4	1.000169
17500.0	539.7	-1.2	-11.2	46.3	690.0	643.0	78.7	2.4	1.000167
18000.0	529.4	-2.6	-11.6	49.7	680.5	641.4	358.2	6.3	1.000165
18500.0	519.3	-3.9	-12.1	52.8	670.7	639.8	347.3	12.9	1.000162
19000.0	509.4	-5.2	-12.5	56.0	661.0	638.3	344.3	18.0	1.000160
19500.0	499.7	-6.4	-13.1	59.0	651.6	636.8	342.8	16.2	1.000157
20000.0	490.0	-7.5	-14.4	57.5	641.7	635.4	342.2	13.7	1.000154
20500.0	480.5	-8.8	-15.5	58.3	632.2	633.9	344.4	11.8	1.000151
21000.0	471.0	-10.1	-16.3	60.3	623.0	632.2	351.4	11.0	1.000148
21500.0	461.7	-11.5	-17.2	62.2	613.9	630.6	358.2	11.2	1.000145
22000.0	452.6	-12.9	-18.2	64.2	605.0	628.9	352.8	12.9	1.000143
22500.0	443.7	-14.2	-19.1	66.2	596.2	627.3	348.4	13.1	1.000140
23000.0	434.9	-15.6	-20.1	68.2	587.6	625.6	343.1	11.5	1.000138
23500.0	426.4	-16.9	-21.0	70.1	579.1	623.9	350.0	9.0	1.000136

STATION ALTITUDE 4051.37 FEET MSL
23 JUNE 81 1500 HRS MDT
ASCENSION NO. 133

UPPER AIR DATA
1740180133
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 13 (Con't)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	417.9	-17.9	-22.0	70.0	569.7	622.8	1.6	7.2	1.000133
24500.0	409.5	-18.5	-22.9	68.1	559.6	622.0	356.9	8.2	1.000130
25000.0	401.2	-19.1	-23.8	66.3	549.7	621.2	346.3	8.3	1.000128
25500.0	393.1	-20.3	-27.5	52.2	541.2	619.7	324.1	8.0	1.000124
26000.0	385.1	-21.3	-28.8	50.6	532.3	618.5	327.5	8.4	1.000122
26500.0	377.2	-22.3	-30.0	49.2	523.4	617.2	339.8	9.3	1.000120
27000.0	369.5	-23.2	-31.2	47.8	514.8	616.0	350.2	11.0	1.000117
27500.0	361.9	-24.2	-32.4	46.4	506.2	614.8	350.0	10.8	1.000115
28000.0	354.4	-25.3	-33.6	45.4	497.9	613.4	336.2	8.5	1.000113
28500.0	347.0	-26.5	-34.9	44.5	489.8	612.0	331.2	8.2	1.000111
29000.0	339.7	-27.6	-36.1	43.6	481.8	610.6	333.1	8.5	1.000109
29500.0	332.6	-28.7	-37.4	42.6	473.9	609.2	346.3	10.6	1.000107
30000.0	325.7	-29.9	-38.6	41.7	466.2	607.7	355.0	11.1	1.000105
30500.0	318.8	-31.0	-39.9	40.9	458.6	606.3	3.7	10.7	1.000103
31000.0	312.0	-32.2	-41.0	40.6	451.0	604.8	3.2	10.4	1.000102
31500.0	305.4	-33.3	-42.2	40.3	443.5	603.4	3.2	10.3	1.000100
32000.0	298.9	-34.5	-43.3	39.8	436.2	601.9	4.3	10.4	1.000098
32500.0	292.4	-35.7	-44.7	38.7	428.9	600.4	9.7	10.4	1.000096
33000.0	286.1	-36.8	-46.0	37.6	421.7	598.9	17.2	10.4	1.000095
33500.0	279.9	-37.7	-47.1	36.1	414.0	597.8	29.5	10.8	1.000093
34000.0	273.8	-38.1	-48.0	34.0	405.7	597.3	37.3	11.3	1.000091
34500.0	267.8	-38.5	-48.9	32.0	397.6	596.8	38.0	11.1	1.000089
35000.0	261.9	-39.3	-51.8	24.8**	390.2	595.7	33.8	10.7	1.000087
35500.0	256.2	-40.6	-58.1	13.0**	383.7	594.2	25.4	10.4	1.000086
36000.0	250.5	-41.8	-76.2	1.1**	377.2	592.6	24.9	10.3	1.000084
36500.0	244.9	-43.1			370.9	590.9	26.9	10.3	1.000083
37000.0	239.5	-44.4			364.7	589.2	25.6	8.6	1.000081
37500.0	234.1	-45.7			358.6	587.5	22.7	6.7	1.000080
38000.0	228.8	-46.7			352.0	586.3	7.0	5.2	1.000078
38500.0	223.6	-47.7			345.5	585.0			1.000077
39000.0	218.5	-49.0			339.7	583.2			1.000076
39500.0	213.5	-50.4			333.9	581.5			1.000074

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL
23 JUNE 81 1500 HRS MDT
ASCENSION NO. 133

MANDATORY LEVELS
17401801J3
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4886.	31.4	7.1	22.	194.3	9.3
800.0	6655.	26.7	7.3	29.	175.3	8.9
750.0	8505.	20.6	7.2	42.	168.7	9.8
700.0	10446.	15.8	3.3	43.	160.0	6.8
650.0	12493.	10.8	-2.1	41.	181.6	6.0
600.0	14664.	5.8	-6.4	41.	67.0	8.9
550.0	16979.	.4	-10.9	43.	125.7	5.5
500.0	19456.	-6.4	-13.1	59.	342.9	16.4
450.0	22127.	-13.2	-18.4	65.	351.4	13.5
400.0	25032.	-19.2	-23.9	66.	343.7	8.2
350.0	28248.	-26.0	-34.4	45.	332.6	8.2
300.0	31849.	-34.3	-43.1	40.	4.1	10.4
250.0	35968.	-41.9			25.1	10.3

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1600 HRS MDT
ASCENSION NO. 411

SIGNIFICANT LEVEL DATA
1740020411
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
876.6	3989.0	36.2	12.4	24.0
850.0	4906.1	32.8	8.9	23.0
744.8	8738.1	20.9	5.7	37.0
700.0	10486.5	15.9	3.7	44.0
662.0	12034.0	11.5	2.5	54.0
643.2	12824.9	10.6	-3.8	36.0
556.0	16745.0	.8	-11.9	38.0
500.0	19514.4	-6.3	-13.4	57.0
452.0	22081.3	-12.8	-16.6	73.0
400.0	25112.4	-19.3	-25.8	56.0
364.4	27382.2	-22.0	-34.8	30.0
324.4	30157.5	-29.3	-41.3	30.0
300.0	31984.1	-32.6	-45.9	25.0
275.0	33982.9	-37.4	-50.4	24.0
250.0	36129.0	-42.1		
200.0	40984.9	-53.2		
166.8	44769.4	-61.2		
150.0	46920.7	-65.4		

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1600 HRS MDT
ASCENSION NO. 411

UPPER AIR DATA
1748020411
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	876.6	36.2	12.4	24.0	981.0	687.3	210.0	12.0	1.000276
4000.0	876.3	36.2	12.4	24.0	980.8	687.3	209.8	12.0	1.000276
4500.0	861.7	34.3	10.5	23.4	970.9	685.0	202.4	11.5	1.000267
5000.0	847.4	32.5	8.9	23.3	960.7	682.8	194.3	11.1	1.000261
5500.0	832.8	31.0	8.7	25.2	949.1	681.1	185.9	11.0	1.000258
6000.0	818.5	29.4	8.5	27.0	937.7	679.4	177.4	11.1	1.000255
6500.0	804.5	27.9	8.1	28.8	926.4	677.6	169.3	11.4	1.000252
7000.0	790.8	26.3	7.7	30.7	915.4	675.8	163.5	11.7	1.000248
7500.0	777.3	24.7	7.2	32.5	904.5	674.1	166.5	10.9	1.000245
8000.0	764.0	23.2	6.6	34.3	893.8	672.3	170.0	10.1	1.000241
8500.0	750.9	21.6	6.0	36.1	883.2	670.5	174.4	9.5	1.000238
9000.0	737.9	20.2	5.4	38.0	872.4	668.7	179.6	9.4	1.000234
9500.0	724.9	18.7	4.9	40.1	861.3	667.1	185.0	9.4	1.000230
10000.0	712.2	17.3	4.3	42.1	850.5	665.4	190.3	8.9	1.000227
10500.0	699.7	15.9	3.7	44.1	839.7	663.7	196.3	8.3	1.000223
11000.0	687.2	14.4	3.4	47.3	828.8	662.1	200.3	7.4	1.000220
11500.0	674.9	13.0	3.0	50.5	818.1	660.4	202.0	6.4	1.000217
12000.0	662.8	11.6	2.6	53.8	807.5	658.8	197.1	4.9	1.000214
12500.0	650.9	11.0	-1.0	43.4	795.4	657.8	170.9	3.4	1.000204
13000.0	639.0	10.2	-4.2	36.1	783.7	656.6	133.1	3.5	1.000196
13500.0	627.3	8.9	-5.2	36.3	772.8	655.1	113.4	5.1	1.000192
14000.0	615.7	7.7	-6.2	36.6	762.0	653.6	106.5	6.6	1.000188
14500.0	604.4	6.4	-7.2	36.9	751.5	652.1	108.3	7.6	1.000185
15000.0	593.3	5.2	-8.3	37.1	741.0	650.6	109.9	8.3	1.000181
15500.0	582.3	3.9	-9.3	37.4	730.8	649.1	112.5	7.5	1.000178
16000.0	571.6	2.7	-10.3	37.6	720.6	647.6	114.7	6.3	1.000174
16500.0	561.1	1.4	-11.4	37.9	710.7	646.1	111.2	3.9	1.000171
17000.0	550.6	.1	-11.9	39.7	700.6	644.6	83.1	1.7	1.000169
17500.0	540.1	-1.1	-12.0	43.2	690.6	643.1	1.1	2.7	1.000166
18000.0	529.9	-2.4	-12.3	46.6	680.7	641.6	344.0	5.3	1.000164
18500.0	519.8	-3.7	-12.6	50.0	670.9	640.0	339.9	7.8	1.000162
19000.0	510.0	-5.0	-12.9	53.5	661.4	638.5	337.8	10.1	1.000159
19500.0	500.3	-6.3	-13.4	56.9	651.9	637.0	336.3	11.1	1.000157
20000.0	490.5	-7.5	-13.9	60.0	642.3	635.4	335.1	12.2	1.000154
20500.0	481.0	-8.8	-14.5	63.1	632.9	633.9	337.1	12.6	1.000152
21000.0	471.6	-10.1	-15.1	66.3	623.6	632.4	339.7	12.8	1.000149
21500.0	462.4	-11.3	-15.8	69.4	614.4	630.8	342.8	13.0	1.000147
22000.0	453.4	-12.6	-16.5	72.5	605.4	629.3	346.3	13.3	1.000144
22500.0	444.4	-13.7	-17.9	70.7	596.0	627.9	342.7	13.7	1.000141
23000.0	435.6	-14.8	-19.4	67.8	586.6	626.6	336.0	14.5	1.000138

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1600 HRS MDT
ASCENSION NO. 411

UPPER AIR DATA
1740020411
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 16 (Con't)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	426.9	-15.8	-20.9	65.0	577.3	625.2	331.5	12.9	1.000135
24000.0	418.3	-16.9	-22.4	62.2	568.2	623.9	325.7	10.8	1.000132
24500.0	410.0	-18.0	-23.9	59.4	559.3	622.6	317.5	10.5	1.000130
25000.0	401.8	-19.1	-25.5	56.6	550.5	621.2	309.1	10.7	1.000127
25500.0	393.7	-19.8	-27.2	51.6	540.9	620.3	307.2	11.9	1.000124
26000.0	385.7	-20.4	-29.0	45.8	531.2	619.6	306.7	13.3	1.000122
26500.0	377.8	-21.0	-30.9	40.1	521.7	618.8	321.6	11.8	1.000119
27000.0	370.2	-21.5	-33.0	34.4	512.3	618.1	343.0	11.1	1.000116
27500.0	362.6	-22.3	-35.1	30.0	503.4	617.1	358.1	12.3	1.000114
28000.0	355.1	-23.6	-36.2	30.0	495.6	615.5	9.3	14.2	1.000112
28500.0	347.7	-24.9	-37.4	30.0	487.9	613.8	7.5	13.2	1.000110
29000.0	340.5	-26.3	-38.6	30.0	480.4	612.2	6.3	12.3	1.000108
29500.0	333.5	-27.6	-39.7	30.0	472.9	610.6	8.4	11.3	1.000107
30000.0	326.5	-28.9	-40.9	30.0	465.6	608.9	12.1	10.7	1.000105
30500.0	319.7	-29.9	-42.1	29.1	457.8	607.6	17.7	10.6	1.000103
31000.0	312.9	-30.8	-43.4	27.7	449.8	606.5	27.1	11.2	1.000101
31500.0	306.3	-31.7	-44.6	26.3	441.9	605.4	37.3	12.5	1.000099
32000.0	299.8	-32.6	-45.9	25.0	434.2	604.2	48.9	14.9	1.000097
32500.0	293.3	-33.8	-47.0	24.7	427.0	602.7	57.9	17.9	1.000096
33000.0	287.0	-35.0	-48.2	24.5	419.9	601.2	61.0	18.8	1.000094
33500.0	280.8	-36.2	-49.3	24.2	412.9	599.7	63.6	19.6	1.000092
34000.0	274.8	-37.4	-50.5	23.8**	406.1	598.1	60.6	18.4	1.000091
34500.0	268.8	-38.5	-53.7	18.2**	399.0	596.7	55.8	16.8	1.000089
35000.0	262.9	-39.6	-57.6	12.6**	392.1	595.3	47.3	14.4	1.000087
35500.0	257.1	-40.7	-62.9	7.0**	385.3	593.9	34.4	12.1	1.000086
36000.0	251.4	-41.8	-74.7	1.4**	378.6	592.5	25.2	11.0	1.000084
36500.0	245.8	-42.9			371.9	591.1	17.1	10.3	1.000083
37000.0	240.2	-44.1			365.3	589.6	15.6	10.3	1.000081
37500.0	234.7	-45.2			358.8	588.1	15.5	10.4	1.000080
38000.0	229.4	-46.4			352.4	586.7	11.0	9.8	1.000078
38500.0	224.2	-47.5			346.1	585.2	5.5	9.3	1.000077
39000.0	219.1	-48.7			340.0	583.7	1.5	8.4	1.000076
39500.0	214.1	-49.8			334.0	582.2	357.2	7.5	1.000074
40000.0	209.3	-50.9			328.1	580.7	349.7	7.1	1.000073
40500.0	204.5	-52.1			322.3	579.2	341.1	7.0	1.000072
41000.0	199.9	-53.2			316.6	577.7	343.5	8.3	1.000071
41500.0	195.1	-54.3			310.6	576.3	350.9	10.7	1.000069
42000.0	190.5	-55.3			304.7	574.9	1.9	12.7	1.000068
42500.0	186.0	-56.4			298.9	573.6	18.2	15.1	1.000067
43000.0	181.6	-57.5			293.3	572.2	30.0	17.9	1.000065

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1600 HRS MDT
ASCENSION NO. 411

UPPER AIR DATA
1740020411
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 16 (Con't)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	177.3	-58.5			287.7	570.7	39.7	20.4	1.000064
44000.0	173.1	-59.6			282.3	569.3	46.8	22.0	1.000063
44500.0	169.0	-60.6			277.0	567.9	52.7	19.4	1.000062
45000.0	164.9	-61.7			271.6	566.6	60.6	16.8	1.000060
45500.0	160.9	-62.6			266.2	565.3	73.8	13.5	1.000059
46000.0	157.0	-63.6			261.0	563.9			1.000058
46500.0	153.1	-64.6			255.8	562.6			1.000057

STATION ALTITUDE 3989.00 FEET MSL
23 JUNE 81 1600 HRS MDT
ASCENSION NO. 411

MANDATORY LEVELS
1740020411
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 17

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4902.	32.8	8.9	23.	195.9	11.1
800.0	6678.	27.3	8.0	29.	166.5	11.6
750.0	8532.	21.5	5.9	36.	174.7	9.5
700.0	10476.	15.9	3.7	44.	196.0	8.3
650.0	12523.	10.9	-1.3	43.	168.6	3.4
600.0	14696.	5.9	-7.6	37.	108.9	8.0
550.0	17009.	.1	-11.9	40.	78.8	1.6
500.0	19486.	-6.3	-13.4	57.	336.3	11.2
450.0	22158.	-13.0	-16.9	72.	347.3	13.4
400.0	25070.	-19.3	-25.8	56.	307.8	10.8
350.0	28301.	-24.5	-37.0	30.	8.1	13.5
300.0	31919.	-32.6	-45.9	25.	48.2	14.7
250.0	36049.	-42.1			23.5	10.8
200.0	40884.	-53.2			342.8	8.1
175.0	43669.	-59.1			43.9	21.8
150.0	46792.	-65.4				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL
23 JUNE 81 1715 HRS MDT
ASCENSION NO. 134

SIGNIFICANT LEVEL DATA
1740180134
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GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 18

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
872.6	4051.4	35.0	8.7	20.0
866.0	4277.6	35.0	10.1	22.0
850.0	4831.3	33.0	7.1	20.0
753.6	8332.5	22.7	4.7	31.0
700.0	10424.1	17.6	4.2	41.0
672.4	11544.9	12.5	3.5	54.0
599.7	14656.6	3.7	1.7	87.0
577.4	15669.5	2.8	.7	86.0
533.5	17757.0	-2.7	-6.9	73.0
520.2	18413.4	-5.0	-9.1	73.0
504.6	19199.2	-6.4	-15.6	48.0
500.0	19434.5	-7.0	-15.9	49.0
481.0	20425.9	-8.7	-16.3	54.0
450.0	22114.7	-11.9	-25.5	31.0
413.2	24244.5	-16.6	-26.5	42.0
400.0	25044.1	-18.9	-28.8	41.0
369.0	27010.6	-21.8	-31.7	40.0
342.0	28833.6	-27.0	-31.7	64.0

STATION ALTITUDE 4051.37 FEET SL
23 JUNE 81 1715 HRS MDT
ASCENSION NO. 134

UPPER AIR DATA
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GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 19

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	872.6	35.0	8.7	20.0	981.7	685.5	250.0	5.1	1.000264
4500.0	859.5	34.2	8.9	21.2	969.4	684.7	238.2	4.3	1.000262
5000.0	845.1	32.5	7.0	20.5	958.8	682.6	220.2	3.7	1.000254
5500.0	830.7	31.0	6.9	22.1	947.0	681.0	199.0	3.7	1.000252
6000.0	816.5	29.6	6.7	23.7	935.4	679.4	179.5	4.0	1.000249
6500.0	802.6	28.1	6.4	25.2	924.0	677.7	164.7	4.8	1.000246
7000.0	788.9	26.6	6.0	26.8	912.7	676.0	154.5	5.8	1.000243
7500.0	775.5	25.1	5.6	28.4	901.6	674.3	155.6	6.0	1.000240
8000.0	762.3	23.7	5.1	30.0	890.7	672.7	161.3	5.9	1.000236
8500.0	749.2	22.3	4.7	31.8	879.5	671.1	167.1	5.8	1.000233
9000.0	736.1	21.1	4.7	34.2	867.7	669.7	173.1	5.8	1.000231
9500.0	723.2	19.9	4.6	36.6	856.0	668.3	179.4	5.8	1.000228
10000.0	710.6	18.6	4.4	39.0	844.6	667.0	185.7	5.8	1.000225
10500.0	698.1	17.3	4.2	41.9	833.7	665.4	191.8	6.0	1.000223
11000.0	685.7	15.0	4.0	47.7	825.3	662.8	197.6	6.1	1.000221
11500.0	673.5	12.7	3.5	53.5	817.1	660.1	203.0	6.3	1.000219
12000.0	661.2	11.2	3.5	58.8	806.4	658.4	208.2	6.4	1.000216
12500.0	649.2	9.8	3.4	64.1	795.7	656.8	213.1	6.6	1.000214
13000.0	637.4	8.4	3.1	69.4	785.1	655.2	216.0	6.9	1.000212
13500.0	625.8	7.0	2.8	74.7	774.7	653.5	215.0	7.3	1.000209
14000.0	614.4	5.6	2.4	80.0	764.5	651.8	214.1	7.7	1.000206
14500.0	603.2	4.1	1.9	85.3	754.4	650.2	213.3	8.2	1.000203
15000.0	592.0	3.4	1.4	86.7	742.6	649.3	212.4	8.1	1.000199
15300.0	581.1	3.0	.9	86.2	730.1	648.7	211.5	8.0	1.000195
16000.0	570.2	1.9	-.5	83.9	719.3	647.4	210.6	7.9	1.000190
16500.0	559.5	.6	-2.3	80.8	709.5	645.7	215.6	7.8	1.000184
17000.0	549.0	-.7	-4.1	77.7	699.8	644.0	220.8	7.7	1.000179
17500.0	538.7	-2.0	-5.9	74.6	690.3	642.4	232.8	8.1	1.000174
18000.0	528.5	-3.6	-7.7	73.0	681.3	640.5	247.6	9.6	1.000170
18500.0	518.5	-5.2	-9.7	70.2	672.5	638.4	261.9	10.9	1.000165
19000.0	508.5	-6.0	-13.7	54.3	662.2	637.2	278.4	12.1	1.000159
19500.0	498.7	-7.1	-15.9	49.3	652.2	635.9	295.0	12.3	1.000155
20000.0	489.1	-8.0	-16.1	51.9	641.6	634.8	312.7	12.5	1.000152
20500.0	479.6	-8.8	-16.7	53.0	631.3	633.8	329.0	12.6	1.000150
21000.0	470.2	-9.8	-19.1	46.2	621.3	632.6	341.4	12.2	1.000146
21500.0	461.0	-10.7	-21.8	39.4	611.5	631.4	353.4	12.0	1.000142
22000.0	452.0	-11.7	-24.8	32.6	601.9	630.2	354.2	11.8	1.000139
22500.0	443.1	-12.8	-25.6	33.0	592.4	628.9	354.2	11.5	1.000136
23000.0	434.3	-13.9	-25.8	35.6	583.1	627.5	347.9	11.4	1.000134
23500.0	425.7	-15.0	-26.0	38.2	574.0	626.2	341.7	11.4	1.000132

STATION ALTITUDE 4051.37 FEET MSL
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UPPER AIR DATA
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GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 19 (Con't)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	417.3	-16.1	-26.3	40.7	565.0	624.9	338.2	11.1	1.000130
24500.0	408.9	-17.3	-27.2	41.7	556.5	623.3	334.5	10.8	1.000128
25000.0	400.7	-18.8	-28.7	41.1	548.5	621.5	333.6	10.9	1.000125
25500.0	392.6	-19.6	-29.5	40.8	539.1	620.5	332.9	11.0	1.000123
26000.0	384.6	-20.3	-30.2	40.5	529.7	619.6	342.2	11.1	1.000121
26500.0	376.8	-21.0	-31.0	40.3	520.5	618.7	352.5	11.7	1.000119
27000.0	369.2	-21.8	-31.7	40.0	511.4	617.8	4.3	13.2	1.000116
27500.0	361.5	-23.2	-31.4	46.4	503.7	616.1	9.8	13.8	1.000115
28000.0	354.1	-24.6	-31.4	53.0	496.1	614.3	12.4	13.7	1.000113
28500.0	346.8	-26.0	-31.5	59.6	488.7	612.5			1.000112

STATION ALTITUDE 4051.37 FEET MSL
23 JUNE 81 1715 HRS MDT
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MANDATORY LEVELS
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GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 20

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL.HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS
650.0	4028.	33.0	7.1	20.	226.9	5.9
800.0	6604.	27.8	6.3	26.	162.2	5.0
750.0	8462.	22.4	4.7	32.	166.7	5.8
700.0	10414.	17.6	4.2	41.	190.8	5.9
650.0	12463.	9.9	3.4	64.	212.8	6.6
600.0	14626.	3.7	1.8	87.	213.0	8.2
550.0	16936.	-.6	-3.9	78.	220.3	7.7
500.0	19407.	-7.0	-15.9	49.	292.3	12.4
450.0	22080.	-11.9	-25.5	31.	354.3	11.7
400.0	25002.	-18.9	-28.8	41.	333.5	10.9
350.0	28231.	-25.4	-31.5	57.		

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